

ARI Programme Management
A Training Course

NATIONAL TARGETS



Programme for Control of
Acute Respiratory Infections

World Health Organization
1990

05793
5796

COMMUNITY HEALTH CELL

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ARI Programme Management

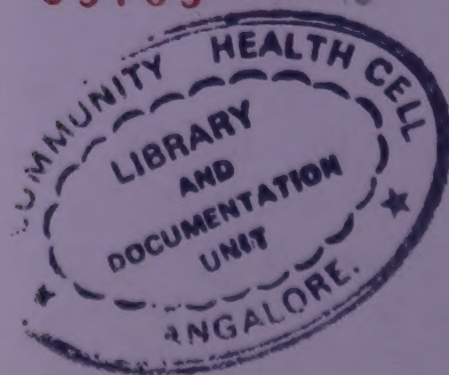
NATIONAL TARGETS



NATIONAL TARGET

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To summarize, a programme has:

- * an objective or purpose (the general destination), for example:

Reduce pneumonia mortality in children under age 5.

- * a main strategy (the means of transport). In an ARI programme the main strategy is standard ARI case management.

- * short-term subtargets (the stops along the route), for example:

By 1991, 80% of health facilities will be regularly supplied with standard antibiotics for treating pneumonia.

In 1992, 60% of pneumonia cases seen at health facilities will receive standard case management of pneumonia.

- * a longer term target (a specific destination and arrival time), for example:

By 1996, reduce mortality due to pneumonia in children under age 5 by 30%.

The comparison of ARI programme management to a journey shows us two important principles of planning:

PLAN CAREFULLY AND REALISTICALLY FOR THE SHORT TERM, and base your long-term plans on this careful short-term planning.

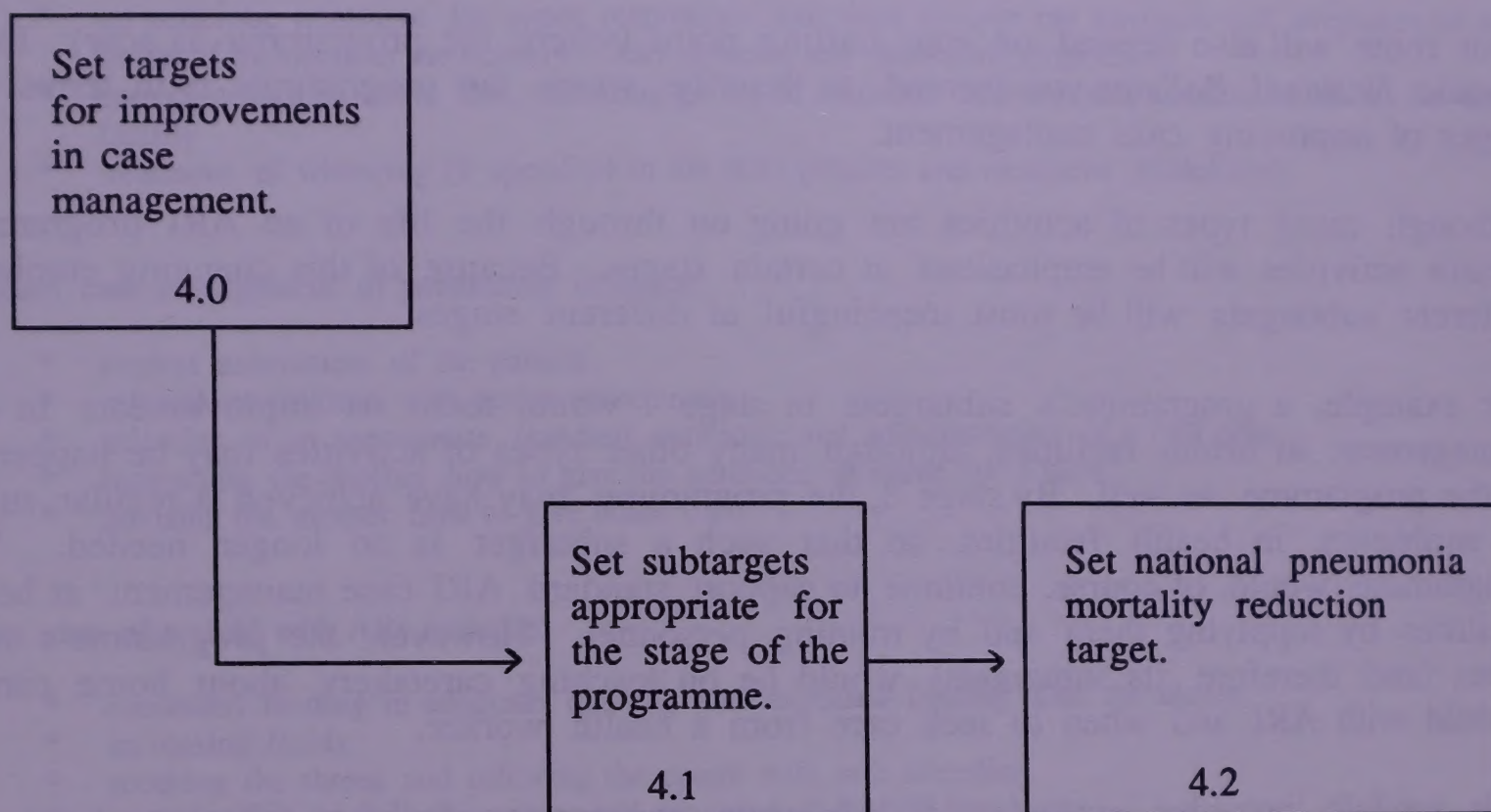
When going on a journey, you would never promise a specific arrival time until you had found out what was feasible given your means of transport and route. Likewise, when planning ARI efforts, you must find out what is feasible in the short term and set realistic short-term subtargets before setting long-term programme targets.

REVISE YOUR LONG-TERM PLANS AS NECESSARY depending on the extent to which short-term plans are achieved.

On a journey, if you found that you were behind schedule, you would change your estimated arrival time and advise those expecting you at your final destination. Similarly, if you find that subtargets are not met, you will need to revise your programme target and inform your staff and others who need to know.

FLOWCHART AND LEARNING OBJECTIVE

The planning steps on the flowchart which are covered in this module are:



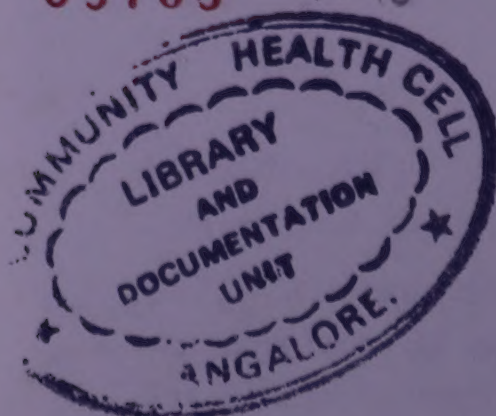
The information, examples, and practice exercises in this module will help prepare you to do these steps in your own country.

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EXAMPLES OF SUBTARGETS FOR THE STANDARD ARI CASE MANAGEMENT STRATEGY

Stages and Emphasis of Programme	Improving access to standard ARI case management	Improving use of standard ARI case management
1 Standard ARI case management in health facilities*	<p>Proportion of all health facilities that will have at least 1 staff member trained in standard ARI case management</p> <p>Proportion of staff at all health facilities who will be trained in standard ARI case management</p> <p>Proportion of all health facilities that will be regularly supplied with standard antibiotics for treating pneumonia</p> <p>Proportion of all health facilities that will be able to give standard ARI case management (have at least one staff member trained and are supplied with standard antibiotics)</p> <p><i>Proportion of the population who will have access to standard ARI case management**</i></p>	<p>Proportion of ARI patients seen at health facilities who will be correctly assessed</p> <p>Proportion of pneumonia cases seen at health facilities who will receive standard case management of pneumonia</p> <p>Proportion of ARI patients seen at health facilities who should not receive antibiotics but are given them</p> <p>Proportion of caretakers of ARI patients seen at health facilities who will receive advice on home care</p>
Standard case management of severe pneumonia in hospitals	Proportion of all hospitals that will have at least 1 staff member trained to give standard case management to cases of severe pneumonia and very severe disease	Proportion of hospital patients with severe pneumonia who will be given standard case management

* Health facilities include first-level health facilities such as health centres, clinics, rural health posts, dispensaries and outpatient departments of hospitals.

** Later in the module worksheets are provided for setting the subtargets which are written in italics.

Stages and Emphasis of Programme	Improving access to standard ARI case management	Improving use of standard ARI case management
	<p><i>Proportion of staff at all hospitals who will be trained to give standard case management to cases of severe pneumonia and very severe disease</i></p> <p>Proportion of all hospitals that will be regularly supplied with appropriate antibiotics for case management of severe pneumonia and very severe disease</p> <p>Proportion of all hospitals that will be supplied with oxygen and oxygen equipment</p> <p>Proportion of all hospitals that will be able to give standard case management of severe pneumonia and very severe disease</p> <p>Proportion of the population who will have access to a hospital providing standard case management of severe pneumonia and very severe disease</p>	<p>Proportion of young infants seen at health facilities with severe pneumonia or very severe disease who will be given standard case management</p> <p><i>Proportion of all childhood pneumonia cases who will be treated with standard antibiotics or receive referral care for severe pneumonia (overall pneumonia treatment rate)</i></p>
2 Standard ARI case management by community- based practitioners	<p>Proportion of community-based practitioners responsible for treating ARI who will be trained in standard ARI case management</p> <p>Proportion of community-based practitioners responsible for treating ARI who will be regularly supplied with standard antibiotics and equipment (e.g., timers)</p>	<p>Proportion of all cases of ARI seen by a community-based practitioner who will be correctly assessed</p> <p>Proportion of pneumonia cases seen by a community-based practitioner who will be -treated (or referred, if appropriate) -advised on home care</p>

Stages and Emphasis of Programme	Improving access to standard ARI case management	Improving use of standard ARI case management
		Proportion of cases seen by a community-based practitioner who should not receive antibiotics but are given them
3 Correct care for a child with ARI in the home	Proportion of caretakers of children less than 5 who will know when to seek care from a health worker for ARI	Proportion of caretakers who will promptly seek treatment for ARI from a health worker when needed
4 Specialized management of respiratory infection cases who have not responded to standard case management	<p>Proportion of referral hospitals that will have at least one doctor trained in specialized diagnosis and treatment for ARI</p> <p>Proportion of doctors in referral hospitals responsible for pediatric ARI cases who will be trained in specialized diagnosis and treatment for ARI</p> <p>Proportion of referral hospitals who will be supplied with drugs and equipment needed to provide specialized diagnosis and treatment for ARI</p> <p>Proportion of the population who will have access to specialized diagnosis and treatment for ARI</p>	Proportion of cases at referral hospitals who have not responded to standard case management that will be given specialized diagnosis and treatment

What Makes a Good Subtarget?

A good subtarget will be written for an aspect of the programme that is currently important and feasible to improve. It will be helpful because it quantifies the improvement or activities that will be the emphasis of the programme during the short-term. Subtargets should be:

- * established for short time periods, such as 1 or 2 years, since short-term planning is more realistic and meaningful;
- * national in scope, for most countries with national programmes;
(Note: Regional subtargets may be appropriate if regions are very large or if different activities are being emphasized in different regions.)
- * realistic, based as much as possible on data from regional and local staff;
- * specific; that is, they should say how much will be achieved by a certain time;
- * measurable; that is, it should be feasible to collect the data needed to evaluate them.

A programme will revise and add to its subtargets as it adds new major activities. However, the list of subtargets should never grow to an unmanageable length. Subtarget setting should be kept simple and should provide numbers that are useful for planning specific activities and resource needs and for monitoring and evaluating progress.

As you work through this module you will see that setting subtargets involves making estimates. Sometimes this may seem almost like guessing. But these estimates or guesses can be either well-informed or poorly informed. If the estimates are made with a full appreciation of all the elements involved and on the basis of all the available facts, they can be an important management tool. Once subtargets have been estimated, it is possible to see what activities and resources will be required by the programme.

Where to Obtain Information Needed for Setting Subtargets

In order to set realistic subtargets you will need to obtain current information from regional and local health staff. The most effective way to obtain the information is to visit regional staff, explain to them what information is needed and why, and if necessary, help them obtain it. Alternatively, a meeting could be held to explain the information needed to all regional staff at once. It is helpful to list your information needs in the form of a questionnaire which staff can complete and return to you.

Annex A (page 36) of this module lists information needed from the regions in order to complete the subtarget worksheets given as examples in this module. The regional staff should be allowed plenty of time to collect information from local staff. They will need to visit some health facilities in order to get accurate information and impressions of the training, supplies and the use of standard ARI case management.

The next sections of this module contain worksheets so that you can practice setting subtargets appropriate for a given stage or the stages thereafter.

Remember that these are just examples; other subtargets could be set. You should set subtargets according to the problems and improvements planned for your programme.

In order to use the worksheets, you need to understand the relationship between fractions, decimal fractions, and percentages. If you need a review of these concepts, please turn now to Annex B: "Review of Mathematical Terms," and complete the short-answer exercises provided. If you have any difficulty, please ask a facilitator for help.

EXAMPLE SUBTARGET: PROPORTION OF POPULATION WITH ACCESS TO STANDARD ARI CASE MANAGEMENT AT HEALTH FACILITIES

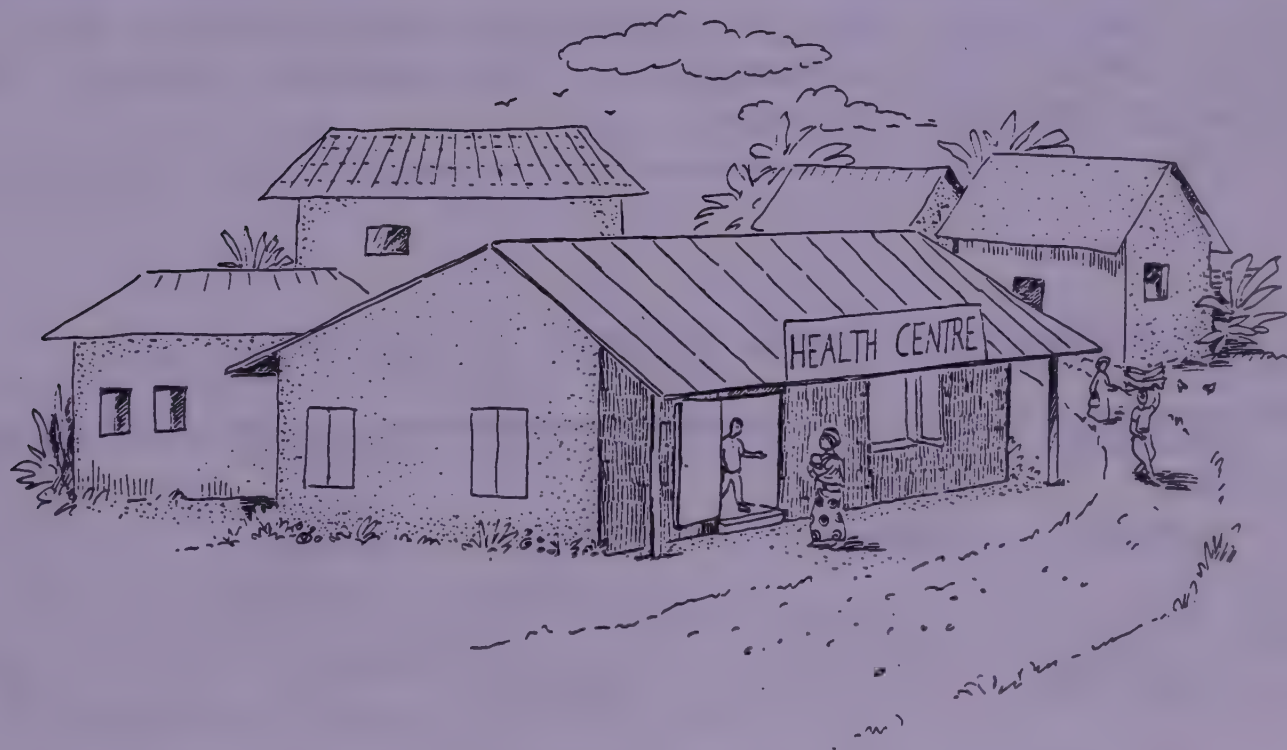
(This subtarget is especially appropriate for stage 1 and subsequently.)

At stage 1, a programme's main concern is training staff at health facilities and supplying them with standard antibiotics, so that an increasing proportion of the population will have access to standard ARI case management.

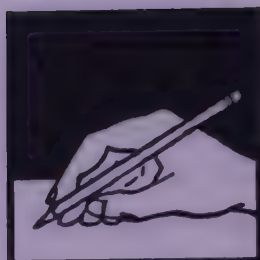
To set this example subtarget, you will need information such as:

- how many health facilities have adequate supplies of antibiotics and at least one trained* staff, and
- how many people have access to health facilities.

Questions to obtain the necessary information from the regions are listed in Annex A.



* Training may be on the job or in a course, but it must include practice managing cases of ARI using standard case management procedures.



EXERCISE A

The programme manager in Ventura wants to set a subtarget for the population which would have access to standard ARI case management at first-level health facilities by the end of 1992.

In this exercise you will set a subtarget for the fictitious country of Ventura, which began an ARI programme in 1988. It is now the end of 1990. The programme defined "access to standard ARI case management at health facilities" as living within 5 kilometres or 1 hour's travel of a health facility with regular supplies of standard antibiotics and at least one staff trained in standard ARI case management. The programme manager visited each region to obtain the following information.

INFORMATION FROM REGIONS IN VENTURA, 1990

Region	Estimated total population	Number of health facilities	Population with access to any facility	Facilities supplied with standard antibiotics	Facilities which also have trained staff
Valen	8 000 000	117	5 200 000	30	3
Sacra	6 000 000	72	2 400 000	14	1
Oscar	7 000 000	92	4 200 000	23	9
Padam	4 000 000	19	800 000	1	1
TOTAL	25 000 000	300	12 600 000	68	14

Since there was an ample supply of antibiotics at the central level, the programme manager assumed that the supply problem could be solved quickly. He decided that what was needed was a rapid training plan. After a planning session with each region's staff, the programme manager was able to make the following projections.

PROJECTIONS FOR 1992

Region	Facilities with supplied and trained staff in 1992	Population with access to the facilities that will have supplies and trained staff
Valen	30	1 354 000
Sacra	16	658 500
Oscar	78	3 785 200
Padam	14	590 500
TOTAL	138	6 388 200

Two new health facilities will be added in Oscar. These are included in the numbers on the above chart.

Instructions: Use the preceding information to complete the subtarget worksheet for Ventura.

WORKSHEET

PROPORTION OF POPULATION WITH ACCESS TO STANDARD ARI CASE MANAGEMENT AT HEALTH FACILITIES

A. ESTIMATE THE NUMBER OF FACILITIES THAT WILL PROVIDE STANDARD ARI CASE MANAGEMENT

A-1 How many health facilities are there in the country? _____

A-2 How many health facilities will there be in 2 years? _____

A-3 How many of the health facilities regularly receive adequate supplies and have staff trained in standard ARI case management?
This should be the number of health facilities now providing standard ARI case management. _____

A-4 Estimate the number of facilities that will have adequate supplies and trained staff two years from now. These facilities should be providing standard case management in 2 years. _____

B. PREDICT ACCESS TO FACILITIES PROVIDING STANDARD ARI CASE MANAGEMENT

B-1 Estimate the population with access to the facilities that will be providing standard ARI case management in 2 years: _____

(Base this estimate on projections from regional and other staff who have information on the number of people with access to the particular facilities that will have supplies and trained staff to provide standard ARI case management.)

B-2 Calculate the proportion of the country's population with access to facilities providing standard ARI case management in 2 years:

$$\frac{\text{population with access to facilities that will be providing standard ARI case management}}{\text{total population of the country}} = \text{proportion of population with access to standard ARI case management in 2 years}$$

SUBTARGET

Complete the subtarget below:

By the end of year _____, _____% of the country's population will have access to standard ARI case management at health facilities.

When you have finished this worksheet, talk with a facilitator.

* * *

Notice that the subtarget worksheets in this module are generic, that is, they can be used by any country to set subtargets of this sort. You will practice using these worksheets in the exercises when you set subtargets for Ventura. You can use the extra copies of the worksheets found in Annex C when you set such subtargets for your country's ARI programme.

* * *

EXAMPLE SUBTARGET: PROPORTION OF STAFF AT ALL HOSPITALS TRAINED TO GIVE STANDARD CASE MANAGEMENT TO CASES OF SEVERE PNEUMONIA AND VERY SEVERE DISEASE

(This subtarget is especially appropriate for stage 1 and subsequently.)

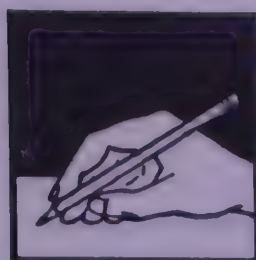
At stage 1 a programme's main concern is training staff at first-level health facilities and supplying them with antibiotics, so that an increasing proportion of the population will have access to standard ARI case management.

The programme is also concerned with training staff at hospitals and supplying them with additional drugs and equipment, so that cases* with severe pneumonia or very severe disease can be referred to hospitals and receive appropriate treatment.

To set this example subtarget, you will need information about staff who treat severe pneumonia and whether they have been trained to provide standard case management. Questions to obtain the necessary information from the regions are listed in Annex A.



* In this module "standard case management of severe pneumonia or very severe disease" will be understood to include case management of infants less than 2 months and children age 2 months up to 5 years. Assessment and treatment procedures are different for these 2 age groups. Training and supplying staff would always enable them to care appropriately for both age groups.



EXERCISE B

At the end of 1990, the programme manager in Ventura wanted to set a subtarget for the staff at hospitals who would be trained to provide standard case management to cases of severe pneumonia or very severe disease by the end of 1992.

Plans for developing an ARI training unit in the largest hospital were completed in 1990. In 1991, one course can be held for staff from hospitals (referral facilities) which includes standard case management of pneumonia, severe pneumonia, and very severe disease. In 1992 the programme manager hopes to conduct 2 such courses.

Each course is planned to last several days and to be limited to 15 participants, so that all participants can manage ARI patients during their training.

SUMMARY OF REPORTS FROM ALL REGIONS 1990

Region	Hospitals (Referral facilities)	Number of Staff Treating Severe Pneumonia	Number Now Trained
Valen	13	65	14
Sacra	5	20	4
Oscar	10	50	15
Padam	2	8	2
Total	30	143	35

Instructions: Use the preceding information to complete the subtarget worksheet for Ventura.

WORKSHEET

PROPORTION OF STAFF AT ALL HOSPITALS TRAINED IN STANDARD CASE MANAGEMENT OF SEVERE PNEUMONIA AND VERY SEVERE DISEASE *

1. In column 1 of the table below, list the regions, and in column 2, list the number of hospital or health centre staff responsible for treating patients with severe pneumonia in each region.
2. In column 3, list the number of hospital or health centre staff in each region who are now trained to provide standard case management of severe pneumonia and very severe disease.
3. In column 4, list the additional number of staff who need to be trained. (Subtract column 3 from column 2.)

[illegible]

* Includes training in treatment of young infants with severe pneumonia or very severe disease.

4. Of the staff needing to be trained, how many are expected to attend training during the next 2 years?*

5. Estimate the proportion of staff at all hospitals that will have been trained 2 years from now.

$$\left(\begin{array}{c} \text{_____} \\ \text{number of} \\ \text{staff now} \\ \text{trained} \end{array} + \begin{array}{c} \text{_____} \\ \text{number to} \\ \text{be trained} \\ \text{in the next} \\ \text{2 years} \end{array} \right) \div \begin{array}{c} \text{_____} \\ \text{total number of} \\ \text{staff who treat} \\ \text{severe pneumonia} \end{array} = \text{_____}$$

SUBTARGET

Complete the subtarget below:

By the end of the year _____, _____, that is, _____% of the staff who treat severe
(number)

pneumonia at hospitals will be trained in standard case management of severe pneumonia and very severe disease.

When you have finished this worksheet, talk with a facilitator.

* Or "during the next year," if you are planning for one year.

EXAMPLE SUBTARGET: PROPORTION OF ALL CHILDHOOD PNEUMONIA CASES TO BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE FOR SEVERE PNEUMONIA

(This subtarget is appropriate for stage 1 and subsequently.)

In stage 1 a programme focuses on increasing access by ensuring that most health facilities are providing standard ARI case management. To reach more of the population, the programme may need to offer other sources of standard ARI case management. In addition, use will undoubtedly increase if people have multiple sources. Therefore, for stage 2 the programme may choose to increase the providers by adding community-based practitioners. The choice of providers will depend on factors discussed in the module *National Policies*.

In stage 1, it is appropriate to have a subtarget for the proportion of all childhood pneumonia cases to be treated with standard antibiotics (at a first-level health facility) or to receive referral care for severe pneumonia. In stage 2, it is appropriate to include also cases that are treated with standard antibiotics by a community-based practitioner. If the new providers belong to the government health system, you may be able to obtain relevant information from regional health staff. This information is listed in Annex A.



EXERCISE C

In the year 1994 in Ventura, about 50% of the population had access to standard ARI case management offered by health facilities. These people also have access to a hospital that can provide referral care. That is, they could take their children to a hospital if it was considered very important to do so. Even though access was still improving rapidly, the programme manager decided it was time for the programme to focus on increasing access by training and supplying community health workers (CHW's) with antibiotics, so that they can treat pneumonia also. (CHW's are young women who are selected by community leaders for special training. This training prepares them to give basic health services to community members.) He decided to set a subtarget for the year 1996 stating the proportion of all pneumonia cases to be treated with standard antibiotics at health facilities or by these CHW's or to receive referral care for severe pneumonia at a hospital.

To set the subtarget, he organized the following information which was already available to him:

Current Use

The population under 5 years of age was about 4 050 000.

According to a household survey conducted in 1994, the annual pneumonia incidence in children was 600 000. This was consistent with available epidemiologic information, which estimated the annual pneumonia incidence to be 150 cases per 1000 children under five years of age.

A review of records from first-level health facilities and hospitals showed that in 1993

- * 96 000 cases of pneumonia were treated with standard antibiotics in health facilities
- * 24 000 cases of severe pneumonia received referral care at hospitals

Predicting Future Access

The programme manager is planning to train and provide antibiotics to 300 CHW's by 1996. Based on plans for supplying and training of additional health facilities, the programme manager expects 60% of the population of Ventura to have access to standard case management at health facilities by 1996. In addition, 40% will now have access to trained, supplied CHW's. More hospital staff will be trained in referral care and the availability of antibiotics and oxygen will be improved.

Predicting Future Use

The programme manager talked with staff from the regions about factors which they thought would affect use of ARI case management at health facilities, from CHW's, and at hospitals in the next 2 years. It was thought that use would increase in all regions for the following reasons:

- * Standard ARI case management includes teaching the mother possible signs of pneumonia, so she will know what to watch for any time the child develops an ARI. As more health facility staff and CHW's are trained and teach all mothers who come for ARI, more and more mothers will know when to come to the health facility or the CHW, and they should come more promptly.
- * More staff would be trained in standard ARI case management.
- * There would be improvements in the service. For example, facilities would be better supplied; clinics would be open longer hours, and CHW's would now have a new, valued service to offer. Satisfied users of the service would tell others in their communities about the services of facilities and CHW's.

- * There would be improvements in other services, such as immunizations and treatment of diarrhoea. These improvements would cause greater use of health facilities in general.
- * More hospitals will be able to provide referral care. Staff at first-level health facilities and CHW's will have increased confidence in the referral care and will refer more cases when needed.

Because of these factors, the programme manager thought that by 1996, more than twice as many pneumonia cases with access would be treated at health facilities. He estimated that 50% of cases with access to health facilities would receive standard antibiotics. He also expected that 25% of the cases with access to CHW's would receive standard antibiotics. He also predicted that twice as many cases (i.e., 48 000) would receive referral care at hospitals for severe pneumonia.

It was assumed that the number of cases of pneumonia would not change.

Instructions: Use the preceding information to complete the subtarget worksheet on the next page for Ventura.

WORKSHEET

PROPORTION OF ALL CHILDHOOD PNEUMONIA CASES TO BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE (Overall Pneumonia Treatment Rate)

A. ESTIMATE THE PROPORTION OF CHILDHOOD PNEUMONIA CASES WHO WERE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVED REFERRAL CARE FOR SEVERE PNEUMONIA LAST YEAR

A-1 Calculate the number of childhood pneumonia cases that were treated with standard antibiotics or received referral care for severe pneumonia last year. Obtain the numbers from a review of treatment records of the different providers of care.

_____	+	_____	+	_____	=	_____
number of pneumonia cases that were treated with standard antibiotics at a health facility		number of pneumonia cases that were treated with standard antibiotics by a community-based practitioner		number of cases that were given referral care for severe pneumonia		number of pneumonia cases that were treated or received referral care

A-2 Estimate the overall number of childhood pneumonia cases last year (pneumonia and severe pneumonia). Base the estimate on household surveys, special studies or estimates based on epidemiological information.

A-3 Calculate the proportion of all childhood pneumonia cases who were treated with standard antibiotics or received referral care last year.

_____	÷	_____	=	_____
number of childhood pneumonia cases who were treated or received referral care		number of childhood pneumonia cases last year		

B. ESTIMATE THE NUMBER OF PNEUMONIA CASES WHO WILL BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE FOR SEVERE PNEUMONIA IN 2 YEARS

B-1 Estimate the expected overall number of childhood pneumonia cases in 2 years (pneumonia and severe pneumonia).

B-2 Estimate the number of childhood pneumonia cases that will be treated with standard antibiotics at health facilities in 2 years.

$$\begin{array}{c} \text{_____} \\ \text{overall number of} \\ \text{cases of childhood} \\ \text{pneumonia (includes} \\ \text{pneumonia and} \\ \text{severe pneumonia)} \\ \text{expected in the} \\ \text{country} \end{array} \times \begin{array}{c} \text{_____} \\ \text{proportion of} \\ \text{population with} \\ \text{access to health} \\ \text{facilities able} \\ \text{to provide} \\ \text{standard ARI} \\ \text{case management} \end{array} \times \begin{array}{c} \text{_____} \\ \text{proportion of} \\ \text{cases with} \\ \text{access to these} \\ \text{health facilities} \\ \text{expected to} \\ \text{receive} \\ \text{treatment} \end{array} = \text{_____}$$

B-3 Estimate the number of childhood pneumonia cases that will be treated with standard antibiotics by community-based practitioners in 2 years.

$$\begin{array}{c} \text{_____} \\ \text{overall number of} \\ \text{cases of childhood} \\ \text{pneumonia expected} \\ \text{in the country} \end{array} \times \begin{array}{c} \text{_____} \\ \text{proportion of} \\ \text{the population} \\ \text{with access to} \\ \text{standard ARI} \\ \text{case management} \\ \text{provided by} \\ \text{community-based} \\ \text{practitioners} \end{array} \times \begin{array}{c} \text{_____} \\ \text{proportion of cases} \\ \text{with access to} \\ \text{these community-} \\ \text{based practitioners} \\ \text{expected to receive} \\ \text{treatment} \end{array} = \text{_____}$$

B-4 Estimate the number of cases of severe pneumonia that are expected to receive referral care at hospitals in 2 years. (Base your estimate on the number of cases receiving referral care in the past and estimates of any increases in the number of hospitals able to give referral care and increases in use of such hospitals.)

B-5 Estimate the overall number of childhood pneumonia cases that will be treated with standard antibiotics or receive referral care for severe pneumonia in 2 years.

_____	+	_____	+	_____	=	_____
number of pneumonia cases that will be treated with standard antibiotics at a health facility		number of pneumonia cases that will be treated with standard antibiotics by a community- based practitioner		number of cases that will be given referral care for severe pneumonia		number of pneumonia cases that will be treated or receive referral care

C. ESTIMATE THE PROPORTION OF ALL CHILDHOOD PNEUMONIA CASES WHO WILL BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE FOR SEVERE PNEUMONIA IN 2 YEARS

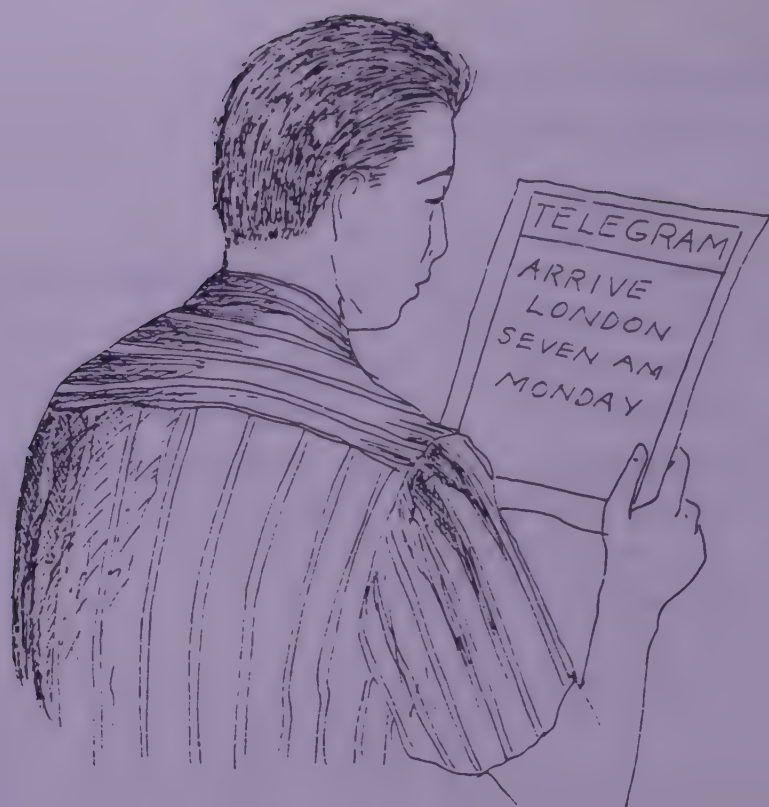
_____	÷	_____	=	_____
overall number of childhood pneumonia cases to be treated or receive referral care in 2 years		number of childhood pneumonia cases in 2 years		

SUBTARGET

Complete the subtarget below:

In the year _____, _____% (_____) of cases of pneumonia in children under age 5 in the country will be treated with standard antibiotics or receive referral care for severe pneumonia.

When you have finished this worksheet, talk with a facilitator.



2.0 ESTIMATE A PNEUMONIA MORTALITY REDUCTION TARGET (Specific Destination and Arrival Time)

Review of Terms

The most common *objective* of an ARI programme is to reduce mortality due to pneumonia. You have been thinking of this objective as the programme's general destination. So far in this module, you have learned to plan the "stops along the route" to this destination, or the *subtargets*.

Now you are ready to estimate an arrival time at a specific destination; this can be called a programme *target*. You hope that achievement of the subtargets will lead to achievement of the target. However, if the subtargets are not achieved, you may decide to revise the target later on.

Why Set Mortality Reduction Targets?

There are some good reasons:

- * Targets remind both programme staff and senior management what they are trying to achieve in the long run.
- * Targets allow resources to be allocated to a programme in relation to its probable impact on health. ARI programmes can have a great impact, so should be entitled to the resources they need.

Why Setting Mortality Reduction Targets is Difficult

Standard ARI case management will undoubtedly lead to reduction in pneumonia mortality. However, it is difficult to say precisely what the impact on mortality will be. In the module *Introduction*, it was explained that standard case management of pneumonia at first-level health facilities, including treatment with antibiotics, may decrease pneumonia mortality by 50% and ALRI mortality by 40%. With the addition of referral care at hospitals for cases of severe pneumonia or very severe disease, ALRI mortality may decrease by 60%. These figures are global estimates and may be very different in any particular country. Thus, it may not be accurate to use these figures in predicting mortality reduction for a national programme.

Though many countries will have estimates of infant and childhood mortality and even of pneumonia mortality, it is difficult to measure changes in these rates accurately. It is also difficult to know the extent to which programme activities have contributed to any changes. Since it is so hard to measure change, it will also be hard to know whether a mortality reduction target has been achieved.

Should Programmes Have Mortality Reduction Targets?

For the reasons given above, target setting is important. Since it is so difficult to set a mortality reduction target, however, it may not be worthwhile to spend a lot of time trying to set a precise target. General estimates of expected mortality reduction may be sufficient. These estimates can be made using either the global figures of effectiveness in preventing deaths, or other more precise estimates if they are available. In this module you will learn to set a target using the effectiveness figure of 60%.

When to Set Targets

Targets should be set for longer time periods than subtargets, for example, 5-8 years. Reduction in pneumonia mortality may not be large enough to be detectable in a shorter period.

Because targets are long-term achievements that are difficult to predict, they are approximate. Having set careful subtargets for the next 2 years, a programme might estimate roughly the mortality reduction expected in 6 years. When progress is evaluated and new subtargets set, the target may be revised.

How to Set Targets

The basic method described in this module is to:

- A. Predict the overall pneumonia treatment rate in the target year (that is, the proportion of pneumonia cases under age 5 that are treated with standard antibiotics or receive referral care for severe pneumonia).

- B. Predict the reduction in pneumonia mortality by the end of the target year. This reduction is the target.

Information Needed to Set Targets

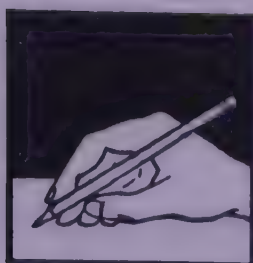
You will need an estimate of the current overall pneumonia treatment rate in children under 5 years.

This includes pneumonia cases under 5 years given standard antibiotics by staff at health facilities or by community-based practitioners, plus cases that are given referral care for severe pneumonia. The number of cases treated can be determined from a review of records from health facilities, community-based practitioners, and hospitals. The number of cases of childhood pneumonia and severe pneumonia can be determined from household surveys, special studies or estimates based on epidemiological information.

You can estimate the current overall pneumonia treatment rate as follows:

number of pneumonia cases treated with standard antibiotics at a health facility last year	+	number of pneumonia cases treated with standard antibiotics by a community-based practitioner last year	+	number of cases given referral care for severe pneumonia
--	---	---	---	--

number of cases of pneumonia and severe pneumonia in children under 5 last year



EXERCISE D

In 1994 in Ventura, the ARI programme manager decided to set a mortality reduction target for the year 2000. He had just set a subtarget for the overall pneumonia treatment rate in 1996 (that is, the proportion of all pneumonia cases to be treated with standard antibiotics or receive referral care). (This was Exercise C.) He predicted that 48% of pneumonia cases would be treated in 1996.

The household survey in 1994 (mentioned in Exercise C) found a childhood pneumonia incidence rate of 150 cases per 1000 children, or about 600 000 cases annually.

The review of records found that

- * 96 000 cases of pneumonia (16% of all childhood pneumonia cases) were treated with standard antibiotics at a health facility
- * 24 000 cases (4%) received referral care for severe pneumonia

Thus, the overall pneumonia treatment rate in 1994 was 20%.

The pneumonia mortality rate was estimated to be 6/1000 based on surveillance studies carried out in a neighbouring country.

By 2000, the population under 5 years will be 4 500 000. Using the current childhood pneumonia incidence rate, the programme manager predicts 675 000 cases of pneumonia.

By 2000, the programme manager predicts that access to standard ARI case management will be nearly 100%. To predict future use of the health services by cases that have access, the manager considered that all the activities of the programme would continue. There would also be increased activities during 1998-99 intended to teach all families about pneumonia and when to seek care for ARI outside the home. Use of standard ARI case management would increase substantially.

He predicted that by 2000, 75% of pneumonia cases with access would receive treatment. He made this estimate as follows:

286 000 pneumonia cases will be treated with standard antibiotics at a health facility	+	100 000 pneumonia cases will be treated with standard antibiotics by a community-based practitioner	+	120 000 cases will receive referral care for severe pneumonia		0.75 overall pneumonia treatment rate
<hr/>						
675 000 overall childhood pneumonia cases expected in 2000						

Instructions: Use the above information to set a pneumonia mortality reduction target for 2000 in Ventura. Use the worksheet on the following page.

WORKSHEET

PNEUMONIA MORTALITY REDUCTION TARGET

A. PREDICT THE OVERALL PNEUMONIA TREATMENT RATE IN THE TARGET YEAR

A-1 Estimate the current overall pneumonia treatment rate, that is, the proportion of pneumonia cases under 5 years that are treated with standard antibiotics or receive referral care.

A-2 Predict the future overall pneumonia treatment rate:

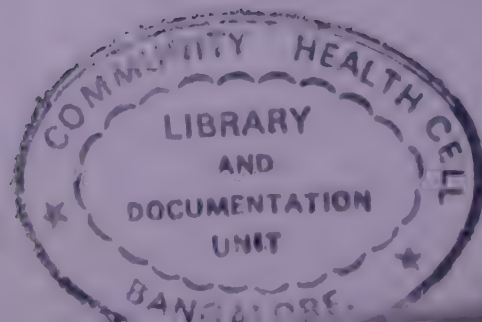
Base this prediction on increases in the number of health facilities and community-based practitioners that will be supplied and trained to give standard antibiotics, an increase in the number of hospitals that have supplies and trained staff to provide referral care for severe pneumonia, and an increase in the rate at which mothers will bring their children with ARI to a trained health worker.

B. ESTIMATE EXPECTED REDUCTION IN THE PNEUMONIA MORTALITY RATE

B-1 Determine the expected increase in the overall pneumonia treatment rate by the target year:

predicted overall
pneumonia treatment
rate for target year

current overall
pneumonia treatment
rate



B-2 Use the following formula to estimate the expected reduction in the childhood pneumonia mortality rate by the target year (0.60 is the effectiveness figure):

$$\frac{0.60 \times \text{increase in overall pneumonia treatment rate}}{1 - (0.60 \times \text{current overall pneumonia treatment rate})}$$

$$= \frac{0.60 \times \quad}{1 - (0.60 \times \quad)} = \quad = \quad =$$

C. ESTIMATE THE CHILDHOOD PNEUMONIA DEATHS PREVENTED

C-1 Calculate the number of childhood pneumonia deaths that would have occurred if there had been no programme progress.

$$\frac{\text{children in the target year}}{\quad} \times \frac{\text{current pneumonia mortality rate}}{\quad} = \frac{\text{childhood pneumonia deaths which would have occurred}}{\quad}$$

C-2 Calculate the number of childhood pneumonia deaths prevented by the programme.

$$\frac{\text{childhood pneumonia deaths which would have occurred}}{\quad} \times \frac{\text{reduction in childhood pneumonia mortality rate}}{\quad} = \frac{\text{childhood pneumonia deaths prevented}}{\quad}$$

TARGET

Complete the target below:

By the year _____, reduce mortality due to pneumonia in children under age 5 by _____%. That is, prevent _____ childhood pneumonia deaths.

When you have finished this worksheet, talk with a facilitator.

REMEMBER THIS

ABOUT NATIONAL TARGETS

- * Set realistic short-term subtargets before setting long-term targets. Set subtargets which are:
 - appropriate for the stage of the programme; that is, they quantify improvements which are important and feasible in the short-term;
 - established for short time periods, such as 1 or 2 years, since short-term planning is most realistic and meaningful;
 - national in scope, for most countries with national programmes;
(Note: Regional subtargets may be appropriate if regions are very large or if different activities are being emphasized in different regions.)
 - realistic, based as much as possible on data from regional and local staff;
 - specific; that is, they should say how much will be achieved by a certain time;
 - measurable; that is, it should be feasible to collect the data needed to evaluate them.
- * In setting some subtargets, you can use the worksheets given in this module as aids.
- * If pneumonia mortality is a problem in your country, use the target worksheet in this module to set a target of the following type:

*By the year _____, reduce mortality due to pneumonia in children under age 5
by _____%.*

- * Good subtargets and targets do not make a good ARI programme. The programme must ***work to achieve them.***

ANNEXES

A: Information Needed From Regional Level to Set ARI Subtargets

B: Review of Mathematical Terms

C: Blank Target Worksheets

Worksheet: Proportion of Population with Access to Standard ARI Case Management at Health Facilities

Worksheet: Proportion of Staff at all Hospitals Trained in Standard Case Management of Severe Pneumonia or Very Severe Disease

Worksheet: Proportion of All Childhood Pneumonia Cases to Be Treated with Standard Antibiotics or Receive Referral Care

Worksheet: Pneumonia Mortality Reduction Target

INFORMATION NEEDED FROM REGIONAL LEVEL TO SET ARI SUBTARGETS

Stage 1 Questions About Existing Facilities:

- * How many first-level health facilities (by category) are there in the region?
- * How many people have access to these health facilities? (Use the national definition of access.)
- * How many health facilities regularly receive adequate supplies of appropriate standard antibiotics for ARI case management?
- * Of the health facilities which are supplied, how many have staff who are trained in standard ARI case management?
- * How many hospitals (referral facilities) are there in the region?
- * At each of these hospitals:
 - How many staff are responsible for treating severe pneumonia cases (in young infants or children under 5)?
 - How many of these staff are now trained to give standard treatment to cases of severe pneumonia and very severe disease?

Questions About Plans for New Facilities:

- * Will any new facilities be built in your region in the next 2 years?¹ If so, how many?
- * How many people will have access to these new facilities?

Stage 2 Questions About Current Access and Use:

- * How many people now have access to first-level health facilities which have supplies and trained staff to provide standard ARI case management?

¹ When phrasing questions to regional staff, use actual dates, for example, "by January 1992."

- * How many cases of childhood pneumonia were treated with standard antibiotics in health facilities last year?
- * How many cases of childhood pneumonia were treated with standard antibiotics by community-based practitioners last year?
- * How many cases were given referral care (at a hospital) for severe pneumonia last year?

Questions About Future Access and Use:

- * In 2 years, how many additional first-level health facilities will regularly receive adequate supplies of standard antibiotics for ARI case management?
- * In 2 years, how many of these additional facilities which are supplied will also have staff who are trained in standard ARI case management?
- * In 2 years, how many hospitals will be regularly supplied and have staff trained in standard case management of severe pneumonia and very severe disease (referral care)?
- * In 2 years, how many people will have access to any facility that will be able to provide standard ARI case management? (Add the populations in the service areas of additional facilities to have supplies and trained staff in the next 2 years to the current population with access to standard ARI case management.)
- * Are there any community-based providers of standard ARI case management who are trained and supplied?
- * How many of these providers are there in the region now? How many of these providers will be trained and supplied in 2 years?
- * In 2 years, how many additional people will have access to standard ARI case management from community-based providers?
- * Do you know of any factors which may affect use of standard ARI case management services in the next 2 years (for example, increases in mother's knowledge of signs of pneumonia, improvement in other health services which may bring more people to facilities)? If so, please describe.
- * Do you expect use of standard ARI case management services at facilities to increase or decrease over the next 2 years? By how much?

REVIEW OF MATHEMATICAL TERMS (OPTIONAL)

This is an optional section which you may wish to complete if it has been a long time since you have worked with fractions, decimal fractions and percentages (three different ways to express a proportion). The short-answer exercises in this annex will serve as a review.

SHORT-ANSWER EXERCISE

1. Which of the following is a fraction? Which is a decimal fraction? Which is a percentage?

a) 0.024

b) $24/1000$

c) 2.4%

d) $24 \div 1000$

2. Is the following statement true or false?

All of the above mathematical expressions are different ways of saying the same thing.

Answers:

1. $24/1000$ is a fraction. 0.024 is a decimal fraction. 2.4% is a percentage.
2. The statement is true. All of the mathematical expressions are different ways of saying the same thing.

In the worksheets in this module, you will often need to convert decimal fractions to percentages and vice versa. A percentage is the same as a fraction with 100 as the denominator (the bottom number). If 20.0% of the population is under age 5, that means approximately 20 out of every 100 people ($20/100$) are under age 5. Another way to express this is a decimal fraction, 0.20 .

Summary: $20.0\% = 20/100 = 0.20$

In the exercises in this course, express proportions as decimal fractions, unless instructed otherwise.

Note: In a decimal fraction a zero is usually written in front of the decimal point. It is also helpful to show where the decimal point is in a percentage, for example, 31.0% , not 31% . We will follow these conventions in this module.

$$0.142 = 14.2\%$$

To express a percentage as a decimal fraction, move the decimal point 2 places the other way:

$$13.0\% = 0.13$$

Remember that each place to the right of the decimal point represents a different denominator. For example, 0.021 can be expressed as 21 per 1000 or $21/1000$. 0.021 can also be expressed as 2.1 per 100 or $2.1/100$.

SHORT-ANSWER EXERCISE

1. What does 0.04 mean as a fraction?
2. What does 0.040 mean as a fraction?

Answers:

1. $0.04 = 4/100$

2. $0.040 = 40/1000$, which reduces to $4/100$

SHORT-ANSWER EXERCISE

Complete the equations below:

Percentage		Decimal Fraction		Fraction
1.0%	=		=	
	=		=	32/100
4.4%	=		=	
	=	1.21	=	
	=	0.013	=	
	=		=	3/8

Answers:

<u>Percentage</u>		<u>Decimal Fraction</u>		<u>Fraction</u>
1.0%	=	0.01	=	1/100
32.0%	=	0.32	=	32/100
4.4%	=	0.044	=	44/1000
121.0%	=	1.21	=	121/100
1.3%	=	0.013	=	13/1000
37.5%	=	0.375	=	3/8

Rates

In this module we will often refer to different types of rates, for example, the childhood pneumonia mortality rate and the overall pneumonia treatment rate. A rate can be expressed as a percentage, decimal fraction, or fraction. Conventions are established based on what is most useful. When you are asked to calculate a rate in a worksheet, we will instruct you how to express it.

SHORT-ANSWER EXERCISE

1. The childhood pneumonia mortality rate is expressed as the number of pneumonia deaths per 1000 children under age 5. Suppose you calculate this rate on your calculator and the answer is 0.0062. Complete the statement below:

Approximately _____per_____ children under age 5 die of pneumonia each year.

2. The overall pneumonia treatment rate is often expressed as a percentage (that is, the percentage of pneumonia cases given treatment with standard antibiotics or referral care for severe pneumonia). Suppose you calculate the overall pneumonia treatment rate on your calculator and the answer is 0.2512. Complete the statement below:

_____ % of pneumonia cases are treated with standard antibiotics or receive referral care.

Answers:

1. 6.2 per 1000 children
2. 25.12% or about 25%

If you had difficulties with the short-answer exercises in this annex, please talk with a facilitator.



ANNEX C

Blank Worksheets
(For Use in Your Own Country)

WORKSHEET

PROPORTION OF POPULATION WITH ACCESS TO STANDARD ARI CASE MANAGEMENT AT HEALTH FACILITIES

A. ESTIMATE THE NUMBER OF FACILITIES THAT WILL PROVIDE STANDARD ARI CASE MANAGEMENT

A-1 How many health facilities are there in the country? _____

A-2 How many health facilities will there be in 2 years? _____

A-3 How many of the health facilities regularly receive
adequate supplies and have staff trained in standard
ARI case management?
This should be the number of health facilities now
providing standard ARI case management. _____

A-4 Estimate the number of facilities that will have
adequate supplies and trained staff two years from now.
These facilities should be providing standard case
management in 2 years. _____

B. PREDICT ACCESS TO FACILITIES PROVIDING STANDARD ARI CASE MANAGEMENT

B-1 Estimate the population with access to the facilities
that will be providing standard ARI case management in
2 years: _____

(Base this estimate on projections from regional and other staff who have
information on the number of people with access to the particular facilities that
will have supplies and trained staff to provide standard ARI case management.)

B-2 Calculate the proportion of the country's population
with access to facilities providing standard ARI case
management in 2 years:

$$\frac{\text{population with access to facilities that will be providing standard ARI case management}}{\text{total population of the country}} = \text{proportion of population with access to standard ARI case management in 2 years}$$

SUBTARGET

Complete the subtarget below:

By the end of year _____, _____% of the country's population will have access to standard ARI case management at health facilities.

WORKSHEET

PROPORTION OF STAFF AT ALL HOSPITALS TRAINED IN STANDARD CASE MANAGEMENT OF SEVERE PNEUMONIA AND VERY SEVERE DISEASE*

1. In column 1 of the table below, list the regions, and in column 2, list the number of hospital or health centre staff responsible for treating patients with severe pneumonia in each region.
2. In column 3, list the number of hospital or health centre staff in each region who are now trained to provide standard case management of severe pneumonia and very severe disease.
3. In column 4, list the additional number of staff who need to be trained. (Subtract column 3 from column 2.)

1	2	3	4
Region	Number of Staff Who Treat Severe Pneumonia	Number Now Trained	Number Needing To Be Trained

Total

* Includes training in treatment of young infants with severe pneumonia or very severe disease.

4. Of the staff needing to be trained, how many are expected to attend training during the next 2 years?*

5. Estimate the proportion of staff at all hospitals that will have been trained 2 years from now.

$$\left(\frac{\text{number of staff now trained}}{\text{number of staff now trained}} + \frac{\text{number to be trained in the next 2 years}}{\text{number to be trained in the next 2 years}} \right) \div \frac{\text{total number of staff who treat severe pneumonia}}{\text{total number of staff who treat severe pneumonia}} = \frac{\text{total number of staff who treat severe pneumonia}}{\text{total number of staff who treat severe pneumonia}}$$

SUBTARGET

Complete the subtarget below:

By the end of the year _____, _____, that is, _____% of the staff who treat severe pneumonia at hospitals will be trained in standard case management of severe pneumonia and very severe disease.
(number)

* Or "during the next year," if you are planning for one year.

WORKSHEET

PROPORTION OF ALL CHILDHOOD PNEUMONIA CASES TO BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE (Overall Pneumonia Treatment Rate)

- A. ESTIMATE THE PROPORTION OF CHILDHOOD PNEUMONIA CASES WHO WERE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVED REFERRAL CARE FOR SEVERE PNEUMONIA LAST YEAR

- A-1 Calculate the number of childhood pneumonia cases that were treated with standard antibiotics or received referral care for severe pneumonia last year. Obtain the numbers from a review of treatment records of the different providers of care.

number of pneumonia cases that were treated with standard antibiotics at a health facility	+	number of pneumonia cases that were treated with standard antibiotics by a community-based practitioner	+	number of cases that were given referral care for severe pneumonia	=	number of pneumonia cases that were treated or received referral care
--	---	---	---	--	---	---

- A-2 Estimate the overall number of childhood pneumonia cases last year (pneumonia and severe pneumonia). Base the estimate on household surveys, special studies or estimates based on epidemiological information.

- A-3 Calculate the proportion of all childhood pneumonia cases who were treated with standard antibiotics or received referral care last year.

$$\frac{\text{number of childhood pneumonia cases who were treated or received referral care}}{\text{number of childhood pneumonia cases last year}} =$$

B. ESTIMATE THE NUMBER OF PNEUMONIA CASES WHO WILL BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE FOR SEVERE PNEUMONIA IN 2 YEARS

B-1 Estimate the expected overall number of childhood pneumonia cases in 2 years (pneumonia and severe pneumonia).

B-2 Estimate the number of childhood pneumonia cases that will be treated with standard antibiotics at health facilities in 2 years.

$$\begin{array}{ccccc} \underline{\hspace{10em}} & \times & \underline{\hspace{10em}} & \times & \underline{\hspace{10em}} = \underline{\hspace{10em}} \\ \text{overall number of} & & \text{proportion of} & & \text{proportion of} \\ \text{cases of childhood} & & \text{population with} & & \text{cases with} \\ \text{pneumonia (includes} & & \text{access to health} & & \text{access to these} \\ \text{pneumonia and} & & \text{facilities able} & & \text{health facilities} \\ \text{severe pneumonia)} & & \text{to provide} & & \text{expected to} \\ \text{expected in the} & & \text{standard ARI} & & \text{receive} \\ \text{country} & & \text{case management} & & \text{treatment} \end{array}$$

B-3 Estimate the number of childhood pneumonia cases that will be treated with standard antibiotics by community-based practitioners in 2 years.

$$\begin{array}{ccccc} \underline{\hspace{10em}} & \times & \underline{\hspace{10em}} & \times & \underline{\hspace{10em}} = \underline{\hspace{10em}} \\ \text{overall number of} & & \text{proportion of} & & \text{proportion of cases} \\ \text{cases of childhood} & & \text{the population} & & \text{with access to} \\ \text{pneumonia expected} & & \text{with access to} & & \text{these community-} \\ \text{in the country} & & \text{standard ARI} & & \text{based practitioners} \\ & & \text{case management} & & \text{expected to receive} \\ & & \text{provided by} & & \text{treatment} \\ & & \text{community-based} & & \\ & & \text{practitioners} & & \end{array}$$

B-4 Estimate the number of cases of severe pneumonia that are expected to receive referral care at hospitals in 2 years. (Base your estimate on the number of cases receiving referral care in the past and estimates of any increases in the number of hospitals able to give referral care and increases in use of such hospitals.)

B-5 Estimate the overall number of childhood pneumonia cases that will be treated with standard antibiotics or receive referral care for severe pneumonia in 2 years.

_____	+	_____	+	_____	=	_____
number of pneumonia cases that will be treated with standard antibiotics at a health facility		number of pneumonia cases that will be treated with standard antibiotics by a community- based practitioner		number of cases that will be given referral care for severe pneumonia		number of pneumonia cases that will be treated or receive referral care

C. ESTIMATE THE PROPORTION OF ALL CHILDHOOD PNEUMONIA CASES WHO WILL BE TREATED WITH STANDARD ANTIBIOTICS OR RECEIVE REFERRAL CARE FOR SEVERE PNEUMONIA IN 2 YEARS

_____	÷	_____	=	_____
overall number of childhood pneumonia cases to be treated or receive referral care in 2 years		number of childhood pneumonia cases in 2 years		

SUBTARGET

Complete the subtarget below:

In the year _____, _____% (_____) of cases of pneumonia in children under age 5 in the country will be treated with standard antibiotics or receive referral care for severe pneumonia.

WORKSHEET

PNEUMONIA MORTALITY REDUCTION TARGET

A. PREDICT THE OVERALL PNEUMONIA TREATMENT RATE IN THE TARGET YEAR

- A-1 Estimate the current overall pneumonia treatment rate, that is, the proportion of pneumonia cases under 5 years that are treated with standard antibiotics or receive referral care.

- A-2 Predict the future overall pneumonia treatment rate:

Base this prediction on increases in the number of health facilities and community-based practitioners that will be supplied and trained to give standard antibiotics, an increase in the number of hospitals that have supplies and trained staff to provide referral care for severe pneumonia, and an increase in the rate at which mothers will bring their children with ARI to a trained health worker.

B. ESTIMATE EXPECTED REDUCTION IN THE PNEUMONIA MORTALITY RATE

- B-1 Determine the expected increase in the overall pneumonia treatment rate by the target year:

$$\frac{\text{predicted overall pneumonia treatment rate for target year}}{\text{current overall pneumonia treatment rate}} = \frac{\quad}{\quad}$$

B-2 Use the following formula to estimate the expected reduction in the childhood pneumonia mortality rate by the target year (0.60 is the effectiveness figure):

$$\frac{0.60 \times \text{increase in overall pneumonia treatment rate}}{1 - (0.60 \times \text{current overall pneumonia treatment rate})}$$

$$= \frac{0.60 \times}{1 - (0.60 \times)} = \quad = \quad =$$

C. ESTIMATE THE CHILDHOOD PNEUMONIA DEATHS PREVENTED

C-1 Calculate the number of childhood pneumonia deaths that would have occurred if there had been no programme progress.

$$\frac{\text{children in the target year}}{\quad} \times \frac{\text{current pneumonia mortality rate}}{\quad} = \frac{\text{childhood pneumonia deaths which would have occurred}}{\quad}$$

C-2 Calculate the number of childhood pneumonia deaths prevented by the programme.

$$\frac{\text{childhood pneumonia deaths which would have occurred}}{\quad} \times \frac{\text{reduction in childhood pneumonia mortality rate}}{\quad} = \frac{\text{childhood pneumonia deaths prevented}}{\quad}$$

TARGET

Complete the target below:

By the year _____, reduce mortality due to pneumonia in children under age 5 by _____%. That is, prevent _____ childhood pneumonia deaths.

